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C1 is further recovered in 27. The -CO_2 containing gas after recompression and drying may be injected for enhanced gas and oil recovery.

In the Claims:

Kindly amend claims 1-3, 5 and 7-11 as follows:

- 4
C1
1. (Amended) A method for recovering substantially all carbon dioxide generated in a combustion process,
characterised in that
the method comprises the following steps:
 - a) a sweep gas is used to pick up oxygen on the permeate side of a mixed conducting membrane in a first stage which is capable of separating oxygen from a pre-heated air stream fed to the retentate side of said membrane,
 - b) the sweep gas containing oxygen is applied as oxidant in a combuster in said first stage to which a carbon containing fuel is separately fed and combusted,
 - c) pre-heated combustion products of step b) containing CO_2 , H_2O and a low concentration of O_2 is used as sweep gas in a membrane in a second stage downstream the combuster in step b)
 - d) the concentration of oxygen in the sweep gas of step c) is increased in the membrane in the second stage (step c) to a sufficiently high level to be used as oxidant in the combuster in the second stage
 - e) and the steps c) - d) are repeated in one or more stages.
 2. (Amended) A method for recovering substantially all carbon dioxide generated in a combustion process according to claim 1,
characterised in that
the combuster is a catalytic combuster.

- A⁴
3. (Amended) A method for recovering substantially all carbon dioxide generated in a combustion process according to claim 1,
characterised in that
the sweep gas used in step a) is superheated steam or a mixture of steam and/or recycled exhaust gas from the last combustor in the sequence.
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- A⁵
5. (Amended) A method for recovering substantially all carbon dioxide generated in a combustion process according to claim 1,
characterised in that
the air stream is heated by heat exchanging with exhaust gas generated in at least one combustor.
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- A⁶
7. (Amended) A method according to claim 1, for generating heat and power.
8. (Amended) A method according to claim 1, wherein the exhaust gas is applied for enhanced oil recovery or for injection in a geological formation.
9. (Amended) A method according to claim 1, wherein the exhaust gas is applied in a chemical process to make carbon containing products.
10. (Amended) A method according to claim 1, wherein heated air generated by the method is applied for generating pure oxygen in a mixed conducting membrane.
11. (Amended) A method according to claim 1, wherein heated air generated by the method is applied for generating synthesis gas consisting of one or more of the components CO, CO₂, H₂ and N₂ or for generating heat in a mixed conducting membrane reactor where the membrane reactor is capable of reacting a mixture of

A⁶
steam and a carbon containing fuel with oxygen permeated through the said membrane to make synthesis gas and/or heat.

Kindly add claim 12 as follows:

- A⁷
12. (New) A method for recovering substantially all carbon dioxide generated in a combustion process according to claim 1,
characterised in that
the combuster is a non-catalytic combuster.
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